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Attorney Docket No. 8194-252

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Alex Krister Raith et al.
Serial No.: 09/451,208
Filed: November 29, 1999
For: METHODS AND APPARATUS FOR DECODING VARIABLY-CODED SIGNALS BASED ON PRIOR COMMUNICATION

Group Art Unit: 2631
Examiner: Pankaj Kumar
Confirmation No.: 8753

Date: July 15, 2003

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TRANSMITTAL OF APPEAL BRIEF
(PATENT APPLICATION--37 C.F.R. § 1.192)

1. Transmitted herewith, in triplicate, is the APPEAL BRIEF in this application, with respect to the Notice of Appeal filed on May 19, 2003.

2. This application is filed on behalf of
   ☐ a small entity
   A verified statement ☐ is attached; ☐ was already filed.

3. Pursuant to 37 C.F.R. § 1.17(c), the fee for filing the Appeal Brief is:

☐	small entity	$160.00
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Appeal Brief fee due $320.00

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Respectfully submitted,

Robert M. Meeks
Registration No. 40,723

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Candi L. Riggs

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APPELLANTS' BRIEF ON APPEAL UNDER 37 C.F.R. §1.192

Sir:

This Appeal is filed in triplicate pursuant to the "Notice of Appeal to the Board of Patent Appeals and Interferences" filed 19 May 2003.

Real Party In Interest

The real party in interest is assignee Ericsson Inc., Research Triangle Park, North Carolina.

Related Appeals and Interferences

Appellants are aware of no appeals or interferences that would be affected by the present appeal.

Status of Claims

Appellant appeals the final rejection of Claims 1-15, 17, 19-26, 30-40, 42, 43, 45, 46, 51-60 and 62-65 at issue in this appeal as finally rejected in the Final Office Action of January 22, 2003 (hereinafter "Final Office Action") and the Advisory Action of April 14, 2003 (hereinafter "Advisory Action"). As of the filing date of this Brief, Claims 1-65 remain pending, of which Claims 16,18, 27-29, 41, 44, 47-50, and 61 are allowed per the Advisory Action. The attached Appendix A presents the Claims 1-65 as amended by Appellants'

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Amendment After Final Action of March 20, 2003 (hereinafter "Amendment After Final"), entry of which is requested.

State of Amendments

In response to a first Office Action of September 26, 2002 (hereinafter "First Office Action"), Appellants submitted a first Amendment on December 20, 2002 (hereinafter "First Amendment"). In response to the Final Office Action, Appellants submitted the Amendment After Final, entry of which per the Advisory Action is requested.

Summary of the Invention

As explained in the Background of the Invention section of the present application, according to some wireless communications standards, a transmitting station may have the capability to change the modulation and channel coding utilized for various channels. *See* Present Application, p. 3. For example, if channel conditions are favorable, the least amount of redundancy (coding) and the modulation type with the highest constellation point (bits/symbol) may be selected. A typical conventional receiver may determine for each received slot (or burst) which mode the transmitter is using. The type of coding used may be signaled by, for example, providing a separate field indicating the current coding outside of the field carrying the payload in each slot.

According to an aspect of the present invention, improved decoding of variably coded signals can be achieved using a code selection process that is biased based on information derived from prior communications between the station receiving the variably coded signal and the station transmitting the variably coded signal. This biasing in the code selection process may arise, for example, from biasing a decision criterion by which a code is selected from a set of possible codes based on information derived from prior communication. The code selection process may also be biased by using knowledge of prior communication to determine the extent to which a received signal is partially decoded according to each of the possible codes to generate likelihood metrics to which such a decision criterion is applied. The information derived from prior communication may include, for example, channel quality measures such as CRC check results, error rate estimates, or the like, as well as information that enables the receiving station to predict behavior of the transmitting station, such as knowledge of ARQ status messages transmitted to the transmitting station or

knowledge of codes used to encode previously transmitted signals. *See* Present Application, pp. 6 and 7.

In some embodiments of the present invention, a signal representing information coded according to a code selected from a set of codes is received at a first station. The received signal is decoding according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes. A code is selected from the set of codes based on the respective likelihood metrics, wherein the selection of the code from the set of codes is biased based on a prior communication between the first station and a second station that transmitted the signal. The received signal is then decoded according to the selected code to generate an estimate of the information. In some embodiments, the selection of the code may be biased on a measure of quality for a channel over which the signal is communicated based on a communication between the first and second stations, such as an error indication, a CRC check result, an error rate estimate, or a signal to noise ratio. The code selection may also be biased based on behavior-predicting information gained from prior communication, for example, such as from communications status report (*e.g.*, an ARQ status message) that is communicated between the first and second stations, or from knowledge of the state of a communications transaction between the first and second stations. *See* Present Application, pp. 7 and 8.

In further embodiments, a signal representing a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, is received at a first station. The received signal is processed to generate an estimate of the second field. Based on a confidence in the generated estimate of the second field, the first station either identifies the code applied to the first field based solely on the generated estimate of the second field, or identifies the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes. The first station then decodes the received signal according to the identified code to produce an estimate of the first field. The selection of the code can be biased according to information derived from prior communication, such as channel quality information, transaction state information, and the like. The extent to which the received signal is partially decoded can also be determined based on such information. *See* Present Application, p. 8.

In yet further embodiments, a signal representing information coded according to a code selected from a set of codes is received at a first station. An extent to which to decode the received signal is determined based on a prior communication between the first station and a second station that transmitted the signal. The received signal is then decoded according to respective codes of the set of codes to the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes. A code is then selected from the set of codes based on the respective likelihood metrics, and the received signal is decoded according to the selected code to generate an estimate of the information. The extent to which the received signal is decoded according to the respective possible codes may be determined based on such information as channel quality measures, information on the state of a communications transaction, and status reports such as ARQ status messages. *See* Present Application, pp. 8 and 9.

Issues

1. Are Claims 12-15, 17, 19, 20, 37-40, 42, 43, 55-60 and 62 properly rejected under 35 U.S.C. § 102(e) as being anticipated by United States Patent No. 6,112,325 to Burshtein (hereinafter "Burshtein")?

2. Are Claims 1-11, 21-26, 30-36, 45, 46, 51-54, and 63-65 properly rejected under 35 U.S.C. § 103(a) as being unpatentable over Burshtein?

Grouping of Claims

For purposes of the present appeal, Claims 1-11, 31-36, and 51-54 constitute the Group I claims, and may be considered as standing or falling together; Claims 21-26, 30, 45, 46, and 63-65 constitute the Group II claims, and may be considered as standing or falling together; and Claims 12-15, 17, 19, 20, 37-40, 42, 43, 55-60 and 62 constitute the Group III claims, and may be considered at standing or falling together.

Argument

I. Introduction

Claims 12-15, 17, 19, 20, 37-40, 42, 43, 55-60, and 62 stand rejected under 35 U.S.C. § 102 as being anticipated by Burshtein, while Claims 1-11, 21-26, 30-36, 45, 46, 51-54, and

63-65 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Burshtein. Anticipation requires that each and every element of the claim be found in a single prior art reference. *W. L. Gore & Associates Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983). Stated another way, all material elements of a claim must be found in one prior art source. *In re Marshall*, 198 U.S.P.Q. 344 (C.C.P.A 1978). "Anticipation under 35 U.S.C. § 102 requires the disclosure in a single piece of prior art of each and every limitation of a claimed invention." *Apple Computer Inc. v. Articulate Systems Inc.* 57 USPQ2d 1057, 1061 (Fed. Cir. 2000). A finding of anticipation further requires that there must be no difference between the claimed invention and the disclosure of the cited reference as viewed by one of ordinary skill in the art. *See Scripps Clinic & Research Foundation v. Genentech Inc.*, 927 F.2d 1565, 1576, 18 U.S.P.Q. 2d 1001, 1010 (Fed. Cir. 1991). Additionally, the cited prior art reference must be enabling, thereby placing the allegedly disclosed matter in the possession of the public. *In re Brown*, 329 F.2d 1006, 1011, 141 U.S.P.Q. 245, 249 (C.C.P.A. 1964). Thus, the prior art reference must adequately describe the claimed invention so that a person of ordinary skill in the art could make and use the invention.

A determination under § 103 that an invention would have been obvious to someone of ordinary skill in the art is a conclusion of law based on fact. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1593, 1 U.S.P.Q.2d 1593 (Fed. Cir. 1987), *cert. denied*, 107 S.Ct. 2187. After the involved facts are determined, the decision maker must then make the legal determination of whether the claimed invention as a whole would have been obvious to a person having ordinary skill in the art at the time the invention was made. *Id.* at 1596. The United States Patent and Trademark Office ("USPTO") has the initial burden under § 103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

To establish a *prima facie* case of obviousness, the USPTO must satisfy three requirements. First, the prior art reference or combination of references must teach or suggest all of the limitations of the claims. *See In re Wilson* 424 F.2d 1382, 1385, 165 U.S.P.Q. 494, 496 (CCPA 1970) ("All words in a claim must be considered in judging the patentability of that claim against the prior art"). Importantly, the teachings must come from the prior art, not from the Appellant's disclosure. *See In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991). Second, the prior art relied upon, coupled with the

knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references. *In re Oetiker,* 24 U.S.P.Q.2d 1443, 1446 (Fed. Cir. 1992); *In re Fine*, 837 F.2d at 1074; *In re Skinner*, 2 U.S.P.Q.2d 1788, 1790 (Bd. Pat. App. & Int. 1986). Third, the proposed modification or combination of the prior art must have a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *See Amgen, Inc. v. Chugai Pharm. Co.*, 927 F2d 1200, 1209, 18 U.S.P.Q.2d 1016, 1023 (Fed. Cir. 1991).

Under § 103, the cited reference or references must teach or suggest *all* the recitations of the claims, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. §2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. §2143.01, citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

As recently emphasized by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to combine must be ***clear and particular***, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). In an even more recent decision, the Court of Appeals for the Federal Circuit has stated that, to support combining or modifying references, there must be particular evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000).

Appellants submit that the Final Official Action and Advisory Action have failed to establish anticipation of Claims 12-15, 17, 19, 20, 37-40, 42, 43, 55-60 and 62 by Burshtein under 35 U.S.C. § 102(e), or obviousness of Claims 1-11, 21-26, 30-36, 45, 46, 51-54, and 63-65 with respect to Burshtein under 35 U.S.C. § 103. Accordingly, Appellants request reversal of the rejections of the claims.

II. THE GROUP I CLAIMS ARE PATENTABLE OVER BURSHTEIN

All of the Group I claims stand rejected under § 103(a) as being unpatentable over Burshtein. Independent Claim 1, which is representative of this group, recites:

> A method of processing a signal representing information coded according to a code selected from a set of codes, the method comprising the steps of:
> receiving the signal at a first station;
> decoding the received signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes;
> selecting a code from the set of codes based on the respective likelihood metrics, ***wherein the selection of the code from the set of codes is biased based on a communication between the first station and a second station that transmitted the signal that occurred prior to reception of the signal at the first station***; and
> decoding the received signal according to the selected code to generate an estimate of the information.

In rejecting Claim 1, the Final Office Action cites a decoder 112 of FIG. 5 of Burshtein as corresponding to the recited "first station" and signal quality estimating units 102, 104, 106, 108 and a decision controller 110 as corresponding to the recited "second station", and that these components perform the recited operations of Claim 1 except "wherein the selection of the code from the set of codes is biased based upon a prior communication." Final Office Action, p. 4. The Final Office Action asserts, however, that it would be obvious to modify Burshtein to provide such recitations because "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to reverse to the second station from transmitting the signal that occurred prior to reception of the signal at the first station, as it has been held that rearranging parts of an invention involves only routine skill in the art." Final Office Action, p. 5. The Advisory Action attempts to elaborate on this argument. *See* Advisory Action, p. 3.

Respectfully, the Final Office Action and the Advisory Action appear to adopt an idiosyncratic interpretation of the terms "first station" and "second station." In particular, the Examiner appears to be stating that components of the apparatus shown in FIG. 5 -- which appears to be, essentially, a receiver -- are "stations."[1] Appellants submit that neither the context of the present application nor the ordinary usage of such terms would lead to interpretation of these ***receiver components*** as "stations."

In addition, the "reversal" described by the Final Office Action and the Advisory Action is, at worst, nonsensical, and at best, a manipulation of the components of Burshtein that would fundamentally change the operation of the device described therein and that, therefore, would be neither taught nor suggested by the prior art. The Advisory Action states "[t]he reversal is occurring since the encoded signal from fig. 5 is going into fig. 8's 350 while the applicant's invention has been rejected based on a decoder (Burshtein fig. 5:112) decoding a signal (Burshtein fig. 5 output of 112) which is then encoded and then going into fig. 8." Advisory Action, p. 3. The meaning of this is somewhat of a mystery, as Fig. 5 is a schematic diagram of a portion of a receiver, and FIG. 8 is a flowchart.

Moreover, the Examiner fails to provide the required clear and particular evidence of a motivation or suggestion to modify the components of Burshtein's receiver as proposed to produce the recitations of Claim 1. Instead, the Examiner provides conclusory statements, including "rearranging parts of an invention involves only routine skill in the art" (Advisory Action, p. 3), "reversing parts of an invention requires routine skill in the art "(Interview Summary, p. 2) and "one may want to encode a signal when transmitting" (Interview Summary, p. 2). With respect to the first of these statements, the Examiner misapplies *In re Japikse*, as the "rearrangement" in that case was ***a rearrangement that would not have modified the operation of the prior art device***. *See* MPEP § 2144.04. To the best of Appellants' understanding of it, this would not be the case with the Examiner's proposed rearrangement of Burshtein. The Examiner provides no clear and particular evidence of a suggestion from the prior art as to why, for example, it would be desirable to modify Burshtein as proposed or, for that matter, evidence of any suggestion as to how such a rearrangement could be achieved and/or could be feasible.

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[1] This was confirmed in the telephonic Interview conducted between the Examiner and Appellants' undersigned representatives on May 5, 2003. *See* Interview Summary of May 21, 2003.

For at least the foregoing reasons, Appellants submit that the § 103 rejection of independent Claim 1 is improper and should be reversed. Similar arguments support reversal of the § 103 rejections of independent Claims 21, 31, and 51, and of the rejections of the other Group I claims.

III. THE GROUP II CLAIMS ARE PATENTABLE OVER BURSHTEIN

All of the Group II claims stand rejected under § 103(a) as being obvious with respect to Burshtein. Claim 21, which is representative of this group, recites:

> A method of processing a signal representing information coded according to a code selected from a set of codes, the method comprising the steps of:
> receiving the signal at a first station;
> determining an extent to which to decode the received signal based on a communication between the first station and a second station that transmitted the signal that occurred prior to reception of the signal at the first station;
> decoding the received signal according to respective codes of the set of codes to the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes;
> selecting a code from the set of codes based on the respective likelihood metrics; and
> decoding the received signal according to the selected code to generate an estimate of the information.

Appellants note that the Examiner has ***never*** provided a *prima facie* basis for rejecting independent Claims 21, 45 or 63. In particular, in rejecting Claim 21 as being anticipated by Burshtein, the First Office Action merely provides a paraphrasing of Claim 21, followed by a parenthetic statement "(discussed in respect to other claims)." First Office Action, p. 11. The same is done with respect to Claims 45 and 63 . *See* First Office Action, pp. 16 and 20. In response, Appellants provided extensive arguments outlining several recitations of Claims 21, 45 and 63 that are neither disclosed nor suggested by Burshtein, including "determining an extent to which to decode the received signal based on a communication between the first station and a second station that transmitted the signal that occurred prior to reception of the signal at the first station." *See* First Amendment, pp. 10 and 11. The Final Office replies by stating that "Claims 21-26 and 31-36 are discussed in regards to other claims in this and prior action" and making similar cryptic statements regarding Claims 45 and 63, without any indication as to where these alleged discussions may be found. Final Office Action, p. 9.

In response to Appellants' renewed request for a specific basis for these rejections in the Amendment After Final, the Advisory Action continues with circular logic:

> As per Claims 21, 31, 45 and 51, since these claims were amended, the arguments were moot in view of the new grounds of rejection. The elements of these claims were discussed in other claims, including the other amended claims in the final action and the other nonamended claims in the first action. The new grounds of rejection is based on the explanations of the rejections of the other amended claims in combination with the explanations of the rejections of the other claims which may have not been amended.

Advisory Action, p. 2. Claims 21 and 45 were amended in Appellants' First Amendment, which, as discussed above, discussed several recitations of these claims, including non-amended recitations, which are neither disclosed nor suggested by Burshtein. In the Final Office Action, the Examiner merely changed the rejection of these claims from a § 102 rejection based on Burshtein to a § 103 rejection based on Burshtein. As discussed above, Appellants First Amendment notes glaring deficiencies in Burshtein, and the Final Office Action (and subsequent actions) never addresses these deficiencies. Moreover, as can be seen from the above-quoted passages from the First Office Action, the Final Office Action and the Advisory Action, the Examiner never specifically identifies the alleged "explanations of the rejections of the other amended claims in combination with the explanations of the rejections of the other claims which may have not been amended."

For at least the foregoing reasons, Appellants submit that the rejections of independent Claims 21, 45 and 63, and of the rest of the Group II claims, are improper, and should be reversed.

IV. THE GROUP III CLAIMS ARE PATENTABLE OVER BURSHTEIN

All of the Group III claims stand rejected under § 102 as being anticipated by Burshtein. Independent Claim 12, which is representative of this group, recites:

> A method of processing a signal representing a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, the method comprising the steps of:
>
> receiving the signal at a first station;
>
> processing the received signal to generate an estimate of the second field;

> identifying the code applied to the first field based on a selected one of the generated estimate of the second field or a combination of the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes, wherein selection is based on a confidence in the generated estimate of the second field; and
>
> decoding the received signal according to the identified code to produce an estimate of the first field.

In rejecting Claim 12, the First Office Action cites column 6, lines 36-38 and 47-60 as teaching "identifying the code applied to the first field based on a selected one of the generated estimate of the second field or a combination of the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes, wherein selection is based on a confidence in the generated estimate of the second field." However, these passages include no description of " a signal representing a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field" and, therefore, do not disclose or suggest the claim recitations relating to identification of a code applied to a field. Rather, the cited passages from Burshtein merely mention that a frame may or may not contain CRC (cyclic redundancy check) information that can be used in determining whether a signal is correctly decoded. There is no indication that this CRC information is a field that "indicates the code applied" to another field, for example, a field that indicates whether 8-PSK or QPSK modulation is applied to transmitted information, as described in exemplary embodiments of the present invention. Rather, as well known to those skilled in the art, a CRC typically is a redundant version of transmitted data that is used in an error checking process for a signal estimate generated from a received signal.

In response to these arguments (which were presented in the First Amendment), the Final Office Action states that:

> . . . Burshtein teaches that a signal which includes CRC data will contain a first field that does not have CRC data and a second field which contains CRC data. The CRC data will be developed based on the code in the non-CRC data portion.

Final Office Action, p. 2. Respectfully, the cited passages from Burshtein do not teach this. The cited passages from Burshtein merely explain that, if a standard defines some transmission rates as "including CRC information," the method described therein may include

repetition of a processing step based on the whether a frame is correctly decoded. *See* Burshtein, column 6, lines 33-43.

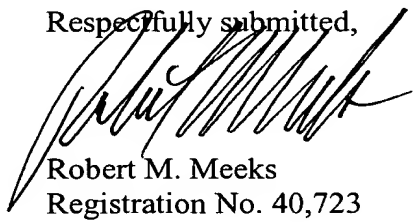
Moreover, the Examiner appears to fundamentally misunderstand how CRC coding is typically used for error detection. As typically used, a CRC field is a representation of the ***data*** that should be present in a received non-CRC field. In particular, in typical conventional CRC applications, a receiver knows the code applied to generate the CRC field *a priori*, such that it can use the CRC field for error detection, i.e., the receiver typically applies the same CRC code applied at the transmitter side to the received non-CRC field and compares the result to the received CRC field to determine if a transmission error has occurred. Appellants respectfully submit that this is irrelevant to the subject matter recited in Claim 12.

For at least the foregoing reasons, Appellants submit that that rejection of Claim independent 12 is improper and should be reversed. Similar arguments support the reversal of the rejections of independent Claims 37 and 55 and the other Group III claims.

IV. CONCLUSION

In light of the above discussion, Appellant submits that each of the rejected claims is patentable over the Burshtein reference. Appellant, therefore, requests reversal of the pending rejections and passage of the present application to issue.

Respectfully submitted,



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Candi L. Riggs

Candi L. Riggs
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1. A method of processing a signal representing information coded according to a code selected from a set of codes, the method comprising the steps of:

receiving the signal at a first station;

decoding the received signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes;

selecting a code from the set of codes based on the respective likelihood metrics, wherein the selection of the code from the set of codes is biased based on a communication between the first station and a second station that transmitted the signal that occurred prior to reception of the signal at the first station; and

decoding the received signal according to the selected code to generate an estimate of the information.

2. A method according to Claim 1:

wherein said step of selecting a code from the set of codes is preceded by the step of generating a measure of quality for a channel over which the signal is communicated based on a communication between the first and second stations; and

wherein said step of selecting a code from the set of codes comprises the step of biasing the selection of a code from the set of codes based on the generated measure of channel quality.

3. A method according to Claim 2, wherein said step of generating a measure of channel quality comprises the step of determining at least one of an error indication, a CRC check result, an error rate estimate, and a signal to noise ratio.

4. A method according to Claim 1:

wherein said step of selecting a code from the set of codes is preceded by the step of communicating a communications status report between the first and second stations; and

wherein said step of selecting a code from the set of codes comprises the step of biasing a selection of a code from the set of codes based on the communications status report.

5. A method according to Claim 4, wherein said step of communicating a communications status report comprises the step of communicating an ARQ (automatic repeat request) status message between the first and second stations.

6. A method according to Claim 1, wherein said step of selecting a code from the set of codes comprises the steps of:

determining a state of a communications transaction between the first and second stations; and

biasing a selection of a code from the set of codes based on the determined state of the communications transaction.

7. A method according to Claim 2:

wherein said step of decoding the received signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes is preceded by the steps of;

receiving a first signal; and

decoding the received first signal according to a first code of the set of codes to generate an estimate of information represented by the previously transmitted signal;

wherein said step of receiving a signal comprises the step of receiving a second signal;

wherein said step of decoding the received signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes comprise the step of decoding the received second signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes; and

wherein said step of selecting a code from the set of codes comprises the step of biasing a selection of a code from the set of codes based on the first code used to decode the received first signal.

8. A method according to Claim 7:

wherein said step of decoding the received first signal according to one of the codes of the set of codes is followed by the step of determining validity of the generated estimate of the information represented by the first signal; and

wherein said step of biasing a selection of a code from the set of codes based on the first code used to decode the previously transmitted signal comprises the step of biasing the selection of the code from the set of codes based on the determined validity of the generated estimate of the information represented by the first signal.

9. A method according to Claim 8, wherein said step of determining validity of the generated estimate of the information represented by the first signal comprises the step of performing a CRC check on the generated estimate of the information represented by the first signal.

10. A method according to Claim 1, wherein the signal represents a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, and:

wherein said step of selecting a code from the set of codes based on the respective likelihood metrics comprises the steps of:

processing the received signal to generate an estimate of the second field; and

selecting a code from the set of codes based on the respective likelihood metrics and the generated estimate of the second field; and

wherein said step of decoding the received signal according to the selected code comprises the step of decoding the received signal according to the selected code to generate an estimate of the first field.

11. A method according to Claim 1, wherein a respective code of the set of codes comprises a respective combination of a modulation code and a channel code.

12. A method of processing a signal representing a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, the method comprising the steps of:

receiving the signal at a first station;

processing the received signal to generate an estimate of the second field;

identifying the code applied to the first field based on a selected one of the generated estimate of the second field or a combination of the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes, wherein selection is based on a confidence in the generated estimate of the second field; and

decoding the received signal according to the identified code to produce an estimate of the first field.

13. A method according to Claim 12:

wherein said step of identifying the code applied to the first field comprises the steps of:

decoding the received signal according to respective codes of the set of codes; and

generating respective likelihood metrics for the respective decodings of the received signal according to the respective codes of the set of codes.

14. A method according to Claim 13, wherein said step of decoding the received signal according to respective codes of the set of codes comprises the step of decoding the received signal according to respective codes of the set of codes to an extent that is determined based on a confidence in the generated estimate of the second field.

15. A method according to Claim 13, wherein said step of decoding the received signal according to respective codes of the set of codes comprises the step of decoding the received signal according to respective codes of the set of codes to an

extent that is determined based on prior communication between the first station and a second station that transmitted the signal.

16. A method of processing a signal representing a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, the method comprising the steps of:

receiving the signal at a first station;

processing the received signal to generate an estimate of the second field;

identifying the code applied to the first field based on a selected one of the generated estimate of the second field or a combination of the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes, wherein selection is based on a confidence in the generated estimate of the second field, and wherein said step of identifying the code applied to the first field comprises the steps of:

decoding the received signal according to respective codes of the set of codes, wherein said step of decoding the received signal according to respective codes of the set of codes to an extent that is determined based on prior communication comprises the step of decoding the received signal according to respective codes of the set of codes to an extent that is determined based on at least one of a measure of channel quality, a communications status report transmitted between the first station and a second station that transmitted the signal, an error indication, an error rate estimate, a state of a communications transaction between the first station and the second station, and an extent to which a previously received signal was decoded; and

generating respective likelihood metrics for the respective decodings of the received signal according to the respective codes of the set of codes; and

decoding the received signal according to the identified code to produce an estimate of the first field.

17. A method according to Claim 12, wherein said step of identifying the code applied to the first field comprises the step of biasing a selection of a code from the set of codes based on prior communication between the first station and a second station that transmitted the signal that occurred prior to reception of the signal at the first station.

18. A method of processing a signal representing a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, the method comprising the steps of:

receiving the signal at a first station;

processing the received signal to generate an estimate of the second field;

identifying the code applied to the first field based on a selected one of the generated estimate of the second field or a combination of the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes, wherein selection is based on a confidence in the generated estimate of the second field, wherein said step of identifying the code applied to the first field comprises the step of biasing a selection of a code from the set of codes based on prior communication between the first station and a second station that transmitted the signal that occurred prior to reception of the signal at the first station, and wherein said step of biasing a selection of a code from the set of codes comprises the step of biasing the selection of a code from the set of codes based on at least one of a measure of channel quality, a communications status report transmitted between the first station and a second station that transmitted the signal, an error indication, an error rate estimate, a state of a communications transaction between the first station and the second station, and an extent to which a previously received signal was decoded; and

decoding the received signal according to the identified code to produce an estimate of the first field.

19. A method according to Claim 12, wherein the first field is coded according to a channel code of a set of channel codes and is modulated according to a

modulation code of a set of modulation codes, wherein the second field indicates the channel code and the modulation code applied to the first field, and wherein said step of identifying the code applied to the first field comprises the steps of:

generating respective likelihood metrics associated with demodulating and decoding the received signal according to respective combinations of ones of the set of modulation codes and ones of the set of channel codes; and

identifying the channel code and the modulation code applied to the first field based on the generated estimate of the second field and the generated likelihood metrics.

20. A method according to Claim 12, wherein the first field is coded according to a channel code of a set of channel codes and is modulated according to a modulation code of a set of modulation codes, wherein the second field indicates the channel code and the modulation code applied to the first field, and wherein said step of identifying the code applied to the first field comprises the steps of:

generating respective likelihood metrics associated with demodulating the received signal according to respective modulation codes of the set of modulation codes;

identifying the modulation code applied to the first field based on the generated estimate of the second field and the generated likelihood metrics associated with demodulating the received signal according to respective modulation codes of the set of modulation codes;

demodulating the received signal according to the determined modulation code;

generating respective likelihood metrics associated with decoding the demodulated signal according to respective channel codes of the set of channel codes; and

identifying the channel code applied to the first field based on the generated estimate of the second field and the generated respective likelihood metrics associated with decoding the demodulated signal according to respective channel codes of the set of channel codes.

21. A method of processing a signal representing information coded according to a code selected from a set of codes, the method comprising the steps of:

receiving the signal at a first station;

determining an extent to which to decode the received signal based on a communication between the first station and a second station that transmitted the signal that occurred prior to reception of the signal at the first station;

decoding the received signal according to respective codes of the set of codes to the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes;

selecting a code from the set of codes based on the respective likelihood metrics; and

decoding the received signal according to the selected code to generate an estimate of the information.

22. A method according to Claim 21, wherein said step of determining an extent comprises the steps of:

generating a measure of quality for a channel over which the signal is communicated; and

determining the extent to which to decode the received signal based on the generated measure of channel quality.

23. A method according to Claim 22, wherein said step of generating a measure of channel quality comprises the step of generating at least one of an error indication, a CRC check result, an error rate estimate, and a signal to noise ratio estimate.

24. A method according to Claim 21, wherein said step of determining an extent to which to decode the received signal comprises the steps of:

communicating a communications status report between the first and second stations; and

determining the extent to which to decode the received signal based on the communications status report.

25. A method according to Claim 24, wherein said step of communicating a communications status report comprises the step of communicating an ARQ status message between the first and second stations.

26. A method according to Claim 21, wherein said step of determining an extent to which to decode the received signal comprises the steps of:

determining a state of a communications transaction between the first and second stations; and

determining the extent to which to decode the received signal based on the determined state of the communications transaction.

27. A method of processing a signal representing information coded according to a code selected from a set of codes, the method comprising the steps of:

receiving the signal at a first station;

determining an extent to which to decode the received signal based on a communication between the first station and a second station that transmitted the signal that occurred prior to reception of the signal at the first station;

decoding the received signal according to respective codes of the set of codes to the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes;

selecting a code from the set of codes based on the respective likelihood metrics; and

decoding the received signal according to the selected code to generate an estimate of the information,

wherein said step of determining an extent to which to decode the received signal is preceded by the steps of:

receiving a first signal; and

decoding the received first signal according to respective codes of the set of codes to a first extent to generate respective first likelihood metrics associated with respective codes of the set of codes;

wherein said step of receiving a signal comprises the step of receiving a second signal; and

wherein said step of determining an extent to which to decode the received signal comprises the step of determining an second extent to which to decode the received second signal based on the first extent to which the received first signal was decoded.

28. A method according to Claim 27:

wherein said step of decoding the received first signal is followed by the steps of:

selecting a first code of the set of codes based on the respective first likelihood metrics;

decoding the received first signal according to the selected first code to generate an estimate of information represented by the first signal; and

determining validity of the generated estimate of the information represented by the first signal; and

wherein said step of determining a second extent to which to decode the received second signal based on the first extent to which the received first signal was decoded comprises the step of determining the second extent to which to decode the received second signal based on the first extent to which the received first signal was decoded and the determined validity of the generated estimate of the information represented by the first signal.

29. A method according to Claim 28, wherein said step of determining validity of the generated estimate of the information represented by the first signal comprises the step of performing a CRC check on the generated estimate of the information represented by the first signal.

30. A method according to Claim 21, wherein the signal represents a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, and:

wherein said step of determining an extent to which to decode the received signal comprises the steps of:

processing the received signal to generate an estimate of the second field; and

determining the extent to which to decode the received signal based on a confidence in the generated estimate of the second field; and

wherein said step of decoding the received signal according to the selected code to generate an estimate of the information comprises the step of decoding the received signal according to the selected code to generate an estimate of the first field.

31. A wireless station, comprising:

a receiver that receives a signal representing information coded according to a code selected from a set of codes, that decodes the received signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes and that selects a code from the set of codes based on the respective likelihood metrics, and that decodes the received signal according to the selected code to generate an estimate of the information, wherein the selection of the code from the set of codes is biased based on a communication between the wireless station and a station that transmitted the signal that occurred prior to reception of the signal.

32. A wireless station according to Claim 31, wherein said receiver comprises:

a code selector circuit that decodes the received signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes and that selects a code from the set of codes based on the respective likelihood metrics, wherein the selection of the code from the set of codes is biased based on a prior communication between the wireless station and the station that transmitted the signal; and

a variable decoder that decodes the received signal according to the selected code to generate an estimate of the information.

33. A wireless station according to Claim 32, wherein said code selector circuit is operative to bias the selection of a code from the set of codes based on at least one of a measure of channel quality, a communications status report, a state of a communications transaction between the wireless station and the station that transmitted the signal, and a previously selected code.

34. A wireless station according to Claim 33, wherein the measure of channel quality comprises at least one of an error indication, a CRC check result, an error rate estimate, and a signal to noise ratio.

35. A wireless station according to Claim 33, wherein the communications status report comprises an ARQ status message.

36. A wireless station according to Claim 31, wherein a respective code of the set of codes comprises a respective combination of a modulation code and a channel code.

37. A wireless station for processing a signal representing a first field and a second field, the first field coded according to a code selected from a set of codes and the second field indicating the code applied to the first field, the wireless station comprising:

a code selector circuit that processes the signal to generate an estimate of the second field, and that is operative, responsive to a confidence in the generated estimate of the second field, to select the code applied to the first field based solely on the generated estimate of the second field or to select the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes; and

a variable decoder, responsive to said code selector circuit, that decodes the signal according to the selected code to produce an estimate of the first field.

38. A wireless station according to Claim 37, wherein said code selector circuit is operative to decode the received signal according to respective codes of the set of codes and to generate respective likelihood metrics for the respective decodings of the received signal according to the respective codes of the set of codes.

39. A wireless station according to Claim 38, wherein said code selector circuit is operative to decode the signal according to respective codes of the set of codes to an extent that is determined based on a confidence in the generated estimate of the second field.

40. A wireless station according to Claim 39, wherein said code selector circuit is operative to decode the signal according to respective codes of the set of codes to an extent that is determined based on prior communication between the wireless station and a station that transmitted the signal.

41. A wireless station for processing a signal representing a first field and a second field, the first field coded according to a code selected from a set of codes and the second field indicating the code applied to the first field, the wireless station comprising:

a code selector circuit that processes the signal to generate an estimate of the second field, and that is operative, responsive to a confidence in the generated estimate of the second field, to select the code applied to the first field based solely on the generated estimate of the second field or to select the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes, wherein said code selector circuit is operative to decode the received signal according to respective codes of the set of codes and to generate respective likelihood metrics for the respective decodings of the received signal according to the respective codes of the set of codes, wherein said code selector circuit is operative to decode the signal according to respective codes of the set of codes to an extent that is determined based on a confidence in the generated estimate of the second field, wherein said code selector circuit is operative to decode the signal according to respective codes of the

set of codes to an extent that is determined based on prior communication between the wireless station and a station that transmitted the signal, and wherein said code selector circuit is operative to decode the signal according to respective codes of the set of codes to an extent that is determined based on at least one of a measure of channel quality, a communications status report transmitted between the wireless station and the station that transmitted the signal, an error indication, an error rate estimate, a state of a communications transaction between the wireless station and the station that transmitted the signal, and an extent to which a previously received signal was decoded; and

a variable decoder, responsive to said code selector circuit, that decodes the signal according to the selected code to produce an estimate of the first field.

42. A wireless station according to Claim 40, wherein said code selector circuit is operative to bias a selection of a code from the set of codes based on prior communication between the wireless station and the station that transmitted the signal.

43. A wireless station according to Claim 42, wherein said code selector circuit is operative to bias a selection of a code from the set of codes based on at least one of a measure of channel quality, a communications status report transmitted between the wireless station and the station that transmitted the signal, an error indication, an error rate estimate, a state of a communications transaction between the first station and the second station, and a previously selected code.

44. A wireless station according to Claim 47, wherein a respective code of the set of codes comprises a respective combination of a modulation code and a channel code.

45. A wireless station for processing a signal representing information coded according to a code selected from a set of codes, the wireless station comprising:

a receiver that receives the signal, that determines an extent to which to decode the received signal based on a communication between the wireless station and a station that transmitted the signal that occurred prior to reception of the signal, that decodes the received signal according to respective codes of the set of codes to the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes, that selects a code from the set of codes based on the respective likelihood metrics, and that decodes the received signal according to the selected code to generate an estimate of the information.

46. A wireless station according to Claim 45, wherein said receiver comprises:

a code selector circuit that determines an extent to which to decode the received signal based on a prior communication between the wireless station and the station that transmitted the signal, that decodes the received signal according to respective codes of the set of codes to the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes, and that selects a code from the set of codes based on the respective likelihood metrics; and

a variable decoder, responsive to said code selector circuit, that decodes the received signal according to the selected code to generate an estimate of the information.

47. A wireless station for processing a signal representing information coded according to a code selected from a set of codes, the wireless station comprising:

a receiver that receives the signal, that determines an extent to which to decode the received signal based on a communication between the wireless station and a station that transmitted the signal that occurred prior to reception of the signal, that decodes the received signal according to respective codes of the set of codes to the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes, that selects a code from the set of codes based on the respective likelihood metrics, and that decodes the received signal according to

the selected code to generate an estimate of the information, wherein said receiver comprises:

a code selector circuit that determines an extent to which to decode the received signal based on a prior communication between the wireless station and the station that transmitted the signal, that decodes the received signal according to respective codes of the set of codes to the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes, and that selects a code from the set of codes based on the respective likelihood metrics, wherein said code selector circuit is operative to determine the extent to which to decode the received signal based on at least one of a measure of channel quality, a communications status report transmitted between the wireless station and the station that transmitted the signal, an error indication, an error rate estimate, a state of a communications transaction between the wireless station and the station that transmitted the signal, and an extent to which a previously received signal was decoded; and

a variable decoder, responsive to said code selector circuit, that decodes the received signal according to the selected code to generate an estimate of the information.

48. A wireless station according to Claim 47, wherein the measure of channel quality comprises at least one of an error indication, a CRC check result, an error rate estimate, and a signal to noise ratio estimate.

49. A wireless station according to Claim 47, wherein the communications status report comprises an ARQ status message.

50. A wireless station according to Claim 47, wherein the signal represents a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, and wherein said code selector circuit is operative to process the received signal to generate an estimate of the second field and to determining the extent to which to

decode the received signal based on a confidence in the generated estimate of the second field.

51. A wireless station for processing a signal representing information coded according to a code selected from a set of codes, the wireless station comprising:

means for receiving the signal;

means for decoding the received signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes;

means for selecting a code from the set of codes based on the respective likelihood metrics, wherein the selection of the code from the set of codes is biased based on a communication between the wireless station and a station that transmitted the signal that occurred prior to reception of the signal; and

means for decoding the received signal according to the selected code to generate an estimate of the information. .

52. A wireless station according to Claim 51, wherein said means for selecting a code from the set of codes comprises means for biasing a selection of a code from the set of codes based on at least one of a measure of channel quality, a communications status report, a state of a communications transaction between the wireless station and the station that transmitted the signal, and a previously selected code.

53. A wireless station according to Claim 51, wherein the signal represents a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, and:

wherein said means for selecting a code from the set of codes based on the respective likelihood metrics comprises:

means for processing the received signal to generate an estimate of the second field; and

means for selecting a code from the set of codes based on the respective likelihood metrics and the generated estimate of the second field; and

wherein said means for decoding the received signal according to the selected code comprises means for decoding the received signal according to the selected code to generate an estimate of the first field.

54. A wireless station according to Claim 51, wherein a respective code of the set of codes comprises a respective combination of a modulation code and a channel code.

55. A wireless station for processing a signal representing a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, the wireless station comprising:

means for receiving the signal;

means for processing the received signal to generate an estimate of the second field;

means, responsive to a confidence in the generated estimate of the second field, for identifying the code applied to the first field based solely on the generated estimate of the second field or for identifying the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes; and

means for decoding the received signal according to the identified code to produce an estimate of the first field.

56. A wireless station according to Claim 55:

wherein said means for identifying the code applied to the first field based solely on the generated estimate of the second field or for identifying the code applied to the first field based on the generated estimate of the second field and respective

likelihood metrics associated with decoding the received signal according to respective codes of the set of codes comprises:

means for decoding the received signal according to respective codes of the set of codes; and

means for generating respective likelihood metrics for the respective decodings of the received signal according to the respective codes of the set of codes.

57. A wireless station according to Claim 56, wherein said means for decoding the received signal according to respective codes of the set of codes comprises means for decoding the received signal according to respective codes of the set of codes to an extent that is determined based on a confidence in the generated estimate of the second field.

58. A wireless station according to Claim 56, wherein said means for decoding the received signal according to respective codes of the set of codes comprises means for decoding the received signal according to respective codes of the set of codes to an extent that is determined based on prior communication between the wireless station and a station that transmitted the signal.

59. A wireless station according to Claim 58, wherein said means for decoding the received signal according to respective codes of the set of codes to an extent that is determined based on prior communication comprises means for decoding the received signal according to respective codes of the set of codes to an extent that is determined based on at least one of a measure of channel quality, a communications status report transmitted between the wireless station and the station that transmitted the signal, an error indication, an error rate estimate, a state of a communications transaction between the wireless station and the station that transmitted the signal, and an extent to which a previously received signal was decoded.

60. A wireless station according to Claim 55, wherein said means for identifying the code applied to the first field based solely on the generated estimate of

the second field or for identifying the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes comprises means for biasing a selection of a code from the set of codes based on prior communication between the wireless station and the station that transmitted the signal.

61. A wireless station for processing a signal representing a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, the wireless station comprising:

means for receiving the signal;

means for processing the received signal to generate an estimate of the second field;

means, responsive to a confidence in the generated estimate of the second field, for identifying the code applied to the first field based solely on the generated estimate of the second field or for identifying the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes, wherein said means for identifying the code applied to the first field based solely on the generated estimate of the second field or for identifying the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes comprises means for biasing a selection of a code from the set of codes based on prior communication between the wireless station and the station that transmitted the signal, and wherein said means for biasing a selection of a code from the set of codes comprises means for biasing the selection of a code from the set of codes based on at least one of a measure of channel quality, a communications status report transmitted between the wireless station and the station that transmitted the signal, an error indication, an error rate estimate, a state of a communications transaction between the wireless station and the station that

transmitted the signal, and an extent to which a previously received signal was decoded; and

means for decoding the received signal according to the identified code to produce an estimate of the first field.

62. A wireless station according to Claim 55, wherein a respective code of the set of codes comprises a respective combination of a modulation code and a channel code.

63. A wireless station for processing a signal representing information coded according to a code selected from a set of codes, the wireless station comprising:

means for receiving the signal;

means for determining an extent to which to decode the received signal based on a communication between the wireless station and a station that transmitted the signal that occurred prior to reception of the signal;

means for decoding the received signal according to respective codes of the set of codes to the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes;

means for selecting a code from the set of codes based on the respective likelihood metrics; and

means for decoding the received signal according to the selected code to generate an estimate of the information.

64. A wireless station according to Claim 63, wherein the means for determining an extent comprises means for determining the extent to which to decode the received signal based on at least one of:

a measure of channel quality;

a communications status report;

a state of a communications transaction between the wireless station and the station that transmitted the signal; and

an extent to which a previously received signal was decoded.

65. A wireless station according to Claim 63, wherein the signal represents a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, and:

wherein said means for determining an extent to which to decode the received signal comprises:

means for processing the received signal to generate an estimate of the second field; and

means for determining the extent to which to decode the received signal based on a confidence in the generated estimate of the second field; and

wherein said means for decoding the received signal according to the selected code to generate an estimate of the information comprises means for decoding the received signal according to the selected code to generate an estimate of the first field.